

Do Holland's Personality Types (RIASEC) Predict Students' Choice of Academic Programs in Cameroon's State Universities?

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ABSTRACT

Students' choice of major field of study in universities in Cameroon continues to be influenced by a variety of factors including personality factors, home and parental factors, socio-economic factors, environmental factors, and cultural factors. This study was carried out to investigate whether Holland's personality types (RIASEC) predict students' choice of academic programs in Cameroon's State Universities. The universities studied were the University of Bamenda and the University of Buea. The correlational survey design was used for this study to determine whether or not students' personality typologies predicted their choice of major fields of study. The sample size for this study comprised 399 male and female second and fourth-year students in the Universities of Buea and Bamenda. Out of the sample size of 369 students, 264 of them came from the University of Buea and 132 from the University of Bamenda. Out of 264 students sampled from the University of Buea, 90 were male and 174 were female while for University of Bamenda, 72 were male and 60 were female, giving a total male student respondent population of 162 and a total female student respondent population of 264. The sample was selected both purposively and randomly. Findings from the study revealed that 28.3% of the students actually changed their program of study to more congruent ones. Statistically, findings showed that students' personality type significantly predict their choice of program (Chi-Square=1038.237, df=255, P=0.000, <0.05) with a high explanatory power of the model 93.3% (Cox and Snell =0.933). analysis showed that Realistic personality, Investigative personality, Artistic personality, Social personality, Enterprising personality and Conventional personality significantly influenced students' choice of program with P-values all <0.05. Therefore, the null hypothesis was rejected and the alternative hypothesis that states that Holland's personality interest types significantly predict students' choice of programs in Cameroon's state universities was accepted.

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KEYWORDS: Personality, Personality interests, Choice of academic programs

1. INTRODUCTION

Making a choice of a program of study is one of the most challenging and important decisions in the life of a student (Mumme, 1997). This is because for most students, the academic disciplines they choose to study at the university either reflect the needs of their desired future careers or determine the type of careers they can pick up in the future. In both cases, the choice of academic program at the university influences career choice. In many cases also, the choice of academic programs that students offer at the university is an expression of their personality characteristics and occupational interests.

According to Holland (1997), personality type is an important factor that determines what disciplines students will study at the university and what occupations they will choose a career in. The basic educational assumption of Holland's (1997) person-environment congruency theory is that learning will produce satisfactory outcomes if learners locate themselves in educational environments and

programs of study that fit well with their personalities (interests, skills and values). Helping students to understand their personalities, interests, motivations, abilities and to identify fields of study that best fit with and support their personality characteristics, interests and aptitudes is, therefore, an important aspect of academic counseling in the university and ultimately contributes to their taking up occupation that are compatible with their personality types. In addition, matching students' personalities with fitting academic programs encourages students to strive for academic excellence, and helps prepare them for career opportunities, and to develop skills for life (Boyer, 1987). However, getting good integration into programs of studies requires that students find reliable mentors and peers, direction and inspiration and opportunities for involvement (Reardon & Bullock, 2004).

Defining students' individual personalities, identifying their interests, aptitudes and the kinds of academic disciplines (or

academic environments) in which their personality characteristics best fit are issues that have implications for counseling, admission and placement of students in higher education. Holland's theory suggests that students' personality types should be able to predict their choice of academic majors and placement. Implied in the theory is equally the assumption that admission conditions should address not only prior field of study, cut off points and language competences but should also address issues of personality, career orientation, interests, capabilities, motivations, life goals, and the fit between personality characteristics and chosen academic fields. It is important that students' academic decisions about what major to enroll in are both informed and responsible. This will help the students to develop more confidence in their chosen field of study, to be better able to predict outcomes, and to develop attitudes that support positive outcomes in their studies. White (1986) cited in Palmar, Dainow & Milner (1996) has argued that it is not enough for universities to admit and place students in academic programs; there is also need for the follow up service of counseling to follow them up and see if they are coping with the program earlier chosen and also to see whether the student made a wrong choice that needed some modification.

Although the importance of enrolling in an academic program that reflects a student's personality type cannot be over emphasized, personality type is, unfortunately, not always the only factor that determines what major program of study a student will enroll in at the university. The aim of this study is to investigate whether Holland's personality types predict students' choice of academic programs in Cameroon's State universities.

2. Review of Literature

2.1. Holland's Environment and Personality Types (The Person-environment fit)

Holland's (1997) theory of occupational choice, also known as the person-environment congruency theory, seeks to classify work environments and to explain personality differences in terms of personality fit with these work environments. The expression "Person-Environment Congruency" refers to the fit or alignment or match between personality type and work environment or college major choice (Spokane, 2000). Holland believed that when people make vocational choices they search for that vocation, which possess the relevant characteristics that match their lifestyle or broad personality characteristics.

Four fundamental assumptions underlie this theory. Firstly, Holland holds that personalities can be generally classified into six types namely the Realistic or Motoric, Investigative or Intellectual, Artistic or Aesthetic, Social or Supportive, Enterprising or Persuasive and Conventional or Conforming personalities (Deprey, 2013).

Secondly, the theory argues that there exist correspondingly six types of work environments or careers, namely the Realistic or Motoric, Investigative or Intellectual, Artistic or Aesthetic, Social or Supportive, Enterprising or Persuasive and Conventional or Conforming. Holland believed that career interests are only an eventual expression of personality (Niles & Harris-Bowlsbey, 2013). The six personality and work environment types as articulated by Holland are represented by the acronym RIASEC (Realistic, Investigative, Artistic, Social, Enterprising and Conventional). The theory pairs personality characteristics

with corresponding vocations (Niles & Harris-Bowlsbey, 2013) thereby categorizing individual differences in terms of their relation to career types (Deprey, 2013). Holland believed that the behaviour of an individual is the result of the interaction between individual personality and the characteristics of the environment in which the individual interacts.

Thirdly, Holland's theory assumes that for each personality type, there are work environments (like one to three) to which a given personality type is best suited. The expression "Person-Environment Congruency" refers to the fit or alignment or match between personality type and work environment or college major choice (Spokane, 2000). Holland believes that when pursuing vocational interests (and by implication academic interests), individuals tend to look for an environment which is congruent with their values, interests and abilities and supports their well-being, that is, an environment is enabling enough to permit them express their values and exercise their abilities and also take on roles and challenges that they find agreeable (Gottfredson & Johnston, 2009). In whatever they do, people tend to search for that environment that has characteristics that best match those of their personality (Anyi, 1991). This personality alignment with a given environment arises, according to Anyi (1991), from the life orientations that a person has developed and from the type of personality characteristics which the individual has inherited. Thus, for Holland, people are not randomly but only discriminately and purposively attracted to work environments (and by extension, academic programs) of a given type.

Holland argued that although personality and environments can be categorized into six specific types, individuals and work environments can either possess one or more predominant types. As such, whether an individual or environment possesses one or more of these types will make for differences in levels of differentiation among individuals and work environments.

Differentiation in the context of Holland's theory refers to the extent to which an individual or environment can be clearly defined in line with a specific type. According to Holland, individuals who possess a single predominant personality type are more differentiated than individuals with more personality types and are less likely to have a hard time making decisions about their career. On the contrary, individuals who identify with more than one personality type are less differentiated and are far more likely than individuals who identify with a single predominant personality type to have a hard time making decisions related to their career choice (Niles & Harris-Bowlsbey, 2013). This means that for Holland, the more differentiated an individual is, the higher the ease of career choice and the less differentiated an individual is with respect to personality type, the lower the ease of career choice.

Holland did not only argue that personality type and personality characteristics predict choice of career; he also contended that the level of congruence between personality type and work environment determines the degree of job satisfaction and performance. According to Holland, if people get into vocations (and by implication academic programs) that match with their personality characteristics, then it is much likely that they will achieve some job satisfaction (or

satisfaction with their studies) as well as stability and an increment in their output (Anyi, 1991). For Holland, the more directly a given work environment corresponds with personality type (that is the higher the degree of congruence or fit) the more would be an individual's level of satisfaction (Deprey, 2013). Applied to school environments, this means that while students' interests and abilities will tend to predict the academic programs that they will choose to enroll in, the level of congruence between their personalities and their chosen academic programs will also predict levels of performance or achievement and satisfaction.

Holland equally argued that personality-work environment fit influences career stability and change. He held that individuals whose personalities are poorly matched to their work environments are more likely to change careers than their congruent counterparts. In the context of the university, this will imply that student-academic program fit is a predictor of level of stability in the program. It means that students who are strongly matched to their academic programs have a higher potential to persist in their chosen academic program over time while those whose personality types are weakly matched to their academic programs have less potential for stability over time in those programs and higher possibilities for program change.

2.2. Influences on University Students' Choice of Major Program of Study

One of the most sensitive and important decisions that learners make in the course of their university studies is choosing a Major field or major program of study. For some this decision is easy, but for others choosing a Major is not easy and can be a reason for confusion, stress and anxiety. According to Edmonds (2012) the decision regarding which Major to take up in the university can be rest-of-life-orienting or rest-of-life-disorienting. For this reason counseling services are essential in helping students identify and choose majors that best fit their interests, aptitudes, needs, life goals and personality orientations. It is therefore important that students' personality types should be a predictor of their choice of programs of study at the university.

Murtagh, Lopez & Lyons (2011) opine that people use several measures when making a choice of career or Major and that these include rationality, emotions, intuition and cognition. Whereas some career or Major choices are based on one or the other of these measures, Murtagh, Lopez & Lyons think that the best decision processes involve all these measures working in synergy and complementing one another.

Since academic Majors often orient students towards certain careers and not others, the same factors that influence individual's choice of certain careers are often the same factors that influence students' choice of majors that orient individuals towards those careers (Edmonds, 2012). A wide range of factors determine which Majors students will most likely choose and the extent to which they will persist in the chosen Majors. Some of these factors include the following:

2.2.1. The Nature of the University Curriculum

The School is a significant agent of socialization where individuals acquire different types of attitudes, knowledge and skills which eventually influence career choice (Anyi, 1991). The curriculum of the university can have a significant effect on students' choices of academic majors.

Often students choose majors that they are interested in. It is therefore important that programs offered at the university should reflect a wide variety of students' interests and needs. When the programs of study designed and offered at the university are limited, it also limits students' choices and this leaves high possibilities for students to end up in majors that do not optimally reflect their interests and competences and that they are not very congruent with.

Beggs, Bantham & Taylor (2008) are of the opinion that since students' decisions about which major to take are often based on perceived fit and future job characteristics, institutions need to provide adequate information on their fields of study in order to clarify students' perceptions and help them make accurate predictions. Besides, they equally emphasize on the need for institutions to inform the students about the strengths and weaknesses of individual fields of study so that students can match these to their own perceived strengths and abilities (Beggs, Bantham & Taylor).

For Pringle, Dubose & Yankey (2010), in making choices of which majors to take, students may also get influenced by the attributes of the major program, for instance, the reputation of the given major in the professional world as well as the opportunities that the given major offers for self-employment.

2.2.2. Students' Subject and Career Interests

Students' level of interest in a discipline as well as in some career to which the discipline is oriented is also a key determining factor in their choice of Major. If students are intrinsically motivated to study a given discipline at a university, then in the absence of other mitigating factors, they would most likely tend to choose those Majors which they have intrinsic motivation to study. Studies such as Yazici & Yazici (2010); Beggs, Bantham & Taylor (2008); Malgwi, Howe, & Burnaby (2005); Gati, Givon & Osipow (1995) have found that students' interest in the subject (or interest in the profession which the discipline trains for) is the most determining factor in students' choice of university Majors. Interest in a discipline influences not only choice of university major but also subsequent choice of career.

Okeke (1979) and Akande (1979) cited in Anyi (1991) found that there is a significant relationship between best liked school subjects and the career aspirations/career choice of their subjects. Yuh (1980) cited in Anyi (1991) also corroborated Okeke (1979) and Akande (1979) with findings which showed that Arts students were more interested in law, business administration, and nursing than the science students whereas the science students demonstrated more interest in engineering, teaching and agriculture.

2.2.3. Family and Parental Influence

For many students at the threshold of making decisions about what choice of Major to enroll in, family, parental preferences and parental attitudes are major influences. According to Booth-Butterfield & Sidelinger (1998), students just entering into the university are particularly influenced by parents. Some students are not properly informed about the different disciplines, their inherent challenges and the prospects that they offer and the only readily available source of assistance or inspiration for them to make a choice of Major in this regard is their parents or family. Parental influence on a students' decision to major in a field could be direct or indirect.

Dietz (2010) found that some students make a choice of university Major that would allow them to follow in their parent's footsteps. This could particularly be the case in those situations where the parents have registered significant successes in their careers. Ma (2009) has argued that some students choose some Majors on the sole basis that their parents have demonstrated preference for certain fields of study or occupations as being more valuable for them than others.

For example, if parents value materialistic and financial rewards, children may be influenced to choose Majors in enterprising careers. This point of view is partly supported by Duffy & Dik (2009) who contend that some students are expected by their parents to take over the ownership or management of a family business; as such, these students tend to choose a Major that would equip them with the skills, competences and resources required for the effective management of the business.

Ma (2009) has observed that when parents exhibit such bias or partiality, they contribute to shaping their child's expectations and career aspirations over time, and so may eventually influence their decision of an academic Major. These perspectives are in line with Krumboltz (1979) who argues that an individual is more likely to express preference for a given field of study or occupation if that individual has been consistently positively reinforced by a valued person who models and advocates engaging in such a field of study or occupation. Gesinde (1973) reported that 66% of students in teacher training and 56% of those in technical college were influenced either by parents or significant others to take up these vocational programs.

Okeke (1977) studied the relationship between parents' occupations and the vocational preferences of children and found that 60% of children were willing to take after their father's occupation (medicine) while 23% were willing to follow the mother's occupation (nursing). Booth-Butterfield & Sidelinger (1998) think that the degree to which parents' preferences and attitudes influence children's choice of Majors depends on the level of communication between parents and children. They believe that if the communication between the parents and children is open, frank and reciprocal, children would more likely tend to share the same attitudes, interests and preferences as their parents.

Bumpus, Crouter & Mchale (2001) suggest that styles of parenting also play a role in shaping how children would choose their major fields of study. For them, if parents grant their children more freedom, independence, and involvement in the making of decisions that affect their daily lives, then the children would have a higher level of autonomy, individuality and a more positive self-concept when it comes to making a decision about their Majors.

Duffy & Dik (2009) argue that some students choose university Majors that align with their parents' expectations, interests, attitudes and family wishes only because they wish to avoid the sense of shame and guilt that may follow if they fail to do so. To complement Duffy & Dik (2009), Berrios-Allison (2005) observed that students from families that fail to foster open and reciprocal communication between parents and children, or in which parents are over-bearing and do not permit their children sufficient autonomy may engage in a given Major or in a subsequent occupation just

for the purpose of pleasing their parents and fulfilling their expectations.

However, if students' choices of academic Majors align with their parents' expectations, interests, attitudes and family wishes but do not reflect the students' own dreams and aspirations, the students may not achieve a sense of satisfaction in the given field of study. Besides, Berrios-Allison (2005) has pointed out two consequences on students if their parents' expectations become the major motivation for their chosen academic major and subsequent career choice. Firstly, he says if the expectations of parents weigh too heavily on students' choices, some students may lose a sense of autonomy and become totally reliant on their parents to make decisions.

Secondly, when and if such students do make a decision about their academic Majors, they will rely heavily on their parents' approval or reinforcement of their decision without which they may begin to question and to doubt their capabilities, their self-perceptions, and may even change their minds and fluctuate from one choice to another (Berrios-Allison, 2005).

For this reason Bantham & Taylor (2008) have suggested that the ideal is for the students to decide a Major that is best for them (that fits their interests and capabilities) and not for their parents and that universities and parents need to cooperate with the students and help them to realize this ideal.

2.2.4. Peer and Teacher Influences

Peer and teacher influences constitute some of the explanations behind students' choice of academic Majors. Some students choose departments or programs in the University just because they want to follow their friends and not because they are interested in the programs; some of them conform to the group because of fear of rejection or because of pride and thus they choose what is not of their interest (Feldman, 2000).

Bantham & Taylor (2008) found that some students chose certain academic Majors because they had peers, siblings and teachers who had earlier on chosen the same; so the students chose based on what they had learned about the Majors from peers, siblings and teachers who had studied in those Majors.

Edmonds (2012) sees this as suggesting that interpersonal relationships play an important role in influencing students' choice of university Majors. Some students make their choices as a result of the influence from their parents (Baldwin and Baldwin, 1981). White (1986) in Palmar, Dainow & Milner (1996) warned wrong choices always have repercussions and open one up to severe challenges. Baldwin & Baldwin (1981) have observed that people differ in choice making and therefore people should avoid influencing others' choices.

Krumboltz (1979) has argued that students' perception of models with the academic fields can also be a decisive factor in their choice of major fields of studies. According to him, an individual develops preference for a course of study or an occupation if such an individual has observed that a valued model has been reinforced for engaging in activities that he/she has learned and which are found to be associated with the successful performance of the course or occupation.

In the same light, he believes that an individual is more likely to express preference for a course of study or an occupation if the individual has been consistently exposed to positive words, feedback, impressions and images associated with the field of study or occupation from peers and significant others.

2.2.5. Socio-economic Background

Social status and the economic background from which one comes can also influence whether or not a student will choose to major in certain disciplines over others. Anyi (1991) has stated that the impact of the family in which a person lives and the family goals and objectives that a person learns to value have an influence on the individual's career choice. Some students come from backgrounds characterized by low social status and economic hardship or poverty.

Sometimes the choice of a discipline to major in for these students is motivated by the desire to ameliorate the socio-economic conditions of their families. In fact, Edmonds (2012) has stated that students who come from poor socio-economic backgrounds and who prioritize their family needs before their own tend to choose a Major that will lead to the best employment opportunity instead of their own enjoyment.

In the same light, Ma (2009) found that students sometimes aim to reach a social class that is at least as high as their parents if not higher. For such students, taking the right Major could guarantee upward social mobility for themselves and subsequently for their children. Xiao & Wang (2009) have argued that the university can be viewed as a classic gain versus loss scenario wherein if one makes a good decision that pays off (such as a good choice of Major field of study) then one would be happy with that choice, whereas if one chooses poorly, one could end up in regret and dissatisfaction.

The study of Ugebor (1979) cited in Edmonds (2012) suggests that socio-economic status also accounts for differentials in the choice of career and implicitly of major field of study. According to Edmonds (2012), Ugebor (1979) found that children from low socio-economic homes were more inclined to prefer nursing, teaching and engineering whereas those from home backgrounds with higher socio-economic status were more inclined to choose medicine, business administration and law.

2.2.6. Perceived Satisfaction

Another important factor that motivates students' choice of academic Majors is the perceived level of satisfaction and happiness in the outcome. Falk, Dunn & Norenzayan (2010) cited in Edmonds (2012) surveyed students to find out their motivations for the courses they would take in school. The findings of their study showed that students were more likely to take a course which they believed would be more enjoyable than one which they believed would be more useful.

The study also found that the students were mostly to make a choice of those courses which were both enjoyable and useful. Their findings, according to Edmonds (2012), reinforces the view that people make decisions based on both reason (rationality) as well as emotions (feelings of expected outcomes and future events).

2.2.7. Environment

The environment plays a very big role in deciding what disciplines students will choose to major in. This fact is underscored by Porter & Umbach (2006) who opine that the "Person-Environment Fit" plays a key role in influencing students' choice of university Major. Developed within the framework of Holland's theory of vocational choice, the concept of person-environment fit suggests that students will experience grater satisfaction and enjoy the most successful outcomes if they choose a university Major that aligns with or conforms to their own personality, their interests, their beliefs and even their politico-religious opinions (Edmonds, 2012).

According to Porter & Umbach (2006) students have the tendency to choose those disciplines of study where they will find other students with characteristics similar to theirs and with interests and ideas similar to theirs. Only in such academic environments will students achieve a sense of belonging and fit.

Moreover, Porter & Umbach contend that if students find themselves in discordant environments (Majors) where they share divergent characteristics, interests and points of views with other students, then they would tend not to achieve a sense of belonging and would rather experience discomfort and dissatisfaction with their chosen academic Major.

Holland's (1997) Person-Environment Congruency theory argued that when pursuing vocational interests (and implicitly academic interests), individuals tend to look for an environment which is congruent with their values, interests and abilities and supports their well-being, that is, an environment in which they can express their values and exercise their abilities and also take on roles and challenges that they find agreeable (Gottfredson & Johnston, 2009). This means that for Holland, an enabling academic environment for each student (university Majors) is that which is congruent with the student's interests, personality, values, needs and beliefs.

In this context, a choice of a university Major cannot be a random choice, but a discriminatory one. Holland categorized vocational (and correspondingly learning environments) into six types represented by the acronym RIASEC (Realistic, Investigative, Artistic or Aesthetic, Social, Enterprising and Conventional environments). According to Holland (1997) the Realistic, Investigative and Artistic environments have commonalities while the Social, Enterprising and Conventional also have commonalities and these two groups of environments are therefore polarized. In this context, Holland (1997) argued that individual can only function best and obtain greater satisfaction in an environment that corresponds to his/her personality type; he/she will also function optimally in any other environment that has characteristics similar to those of the environment that best fits his or her personality.

However, a person will function minimally and experience little satisfaction in an environment whose characteristics do not fit with those of his/her personality. This means that for Holland (1997) an Investigative person will function best and experience greater satisfaction in an Investigative environment. Such a person will also function optimally in a Realistic or Artistic Environment. However, he/she will produce minimal output and experience little satisfaction in either a Social, Enterprising or Conventional environment.

Some local studies have confirmed the hypothesis that the environment plays a key role in influencing students' choice of subject majors. Aagwara (1979) and Aghamelu (1980) cited in Anyi (1991) found that students who come from schools located in urban areas were more able to express themselves and experienced less external influence on their choice of major field of study and subsequently on their choice of careers than students who came from rural environments.

The study of Sonsanya (1980) also reported in Anyi (1991) found that students from urban settings were significantly more interested in outdoor, mechanical, computational and persuasive jobs whereas the students from rural setups were more than urban students inclined towards scientific, artistic and clerical jobs.

Finally, Anyi (1991) has cited the study of Ayangbile (1980) on rural/urban influence on career aspirations and choices in Jos. The said study found that village students were more externally influenced in their choice of medicine as a career, and had higher extrinsic rewards, self-expression and people-oriented values than town and city students.

2.2.8. Personality Orientation

Personality characteristics constitute an important factor in students' choice of university Major. Holland (1997) theorized that people can be broadly categorized into six different personality types namely the Realistic, Investigative, Artistic, Social, Enterprising and Conventional personality types. He also argued that in the search for careers (and implicitly fields of study) people tend to choose those careers (and disciplines) that correspond to their personality types.

Pringle, Dubose & Yankey (2010) support Holland's hypothesis that personality factors influence students' decision about which Majors to enroll in. According to Pringle, Dubose & Yankey (2010), certain fields of study and the occupations that follow from them carry certain stereotypes such that students will often choose their Major based on how closely their personalities match these stereotypes.

For instance, some majors are thought to be abstract (such as mathematics), others to be critical (such as philosophy), still others to be analytical (such as accounting) and others like marketing are thought to be creative and enthusiastic (Edmonds, 2012).

Porter & Umbach (2006) have, however observed that choosing a Major on a basis of some stereotypes attached to it (or to a field of work that follows from it) is problematic and unsustainable. One reason for this is that certain stereotypes with which Majors and occupations are tagged are either false or outdated.

According to Porter & Umbach (2006) if a person chooses a Major on the basis of a stereotype that is either false or no longer true for that Major or occupation, he/she would have difficulties in that domain. They advise that since the nature of the business world is inconstant, it demands of people to exhibit a diversity of personality characteristics and to be able to fill different roles at different times.

Duffy & Dik (2009) also lend support to the assumption that personality is influential in choice of study Major and subsequent occupational choice. They explain, for instance, that some students have a high sense of social responsibility

for human welfare irrespective of monetary or materialistic gains and that they find satisfaction not from financial rewards or social status but by making a difference in the world. For this reason, when it comes to choosing their Majors, they tend to choose that Major that would enable them develop the competences needed to be of service to humanity in a desired domain (Duffy & Dik, 2009).

In the same light, Beggs, Bantham & Taylor (2008) have observed that students with a high component Social Personality will tend to choose those Majors that encourage team work or building other people's strengths around one. Moreover, since an individual's convictions and values are an integral part of personality, Porter & Umbach (2006) believe that students' choice of Major would also be influenced by their beliefs, values, morals or interests and that finding a Major that is consistent with these will bring greater academic satisfaction to the student.

2.2.9. Self-Concept (or Self-Perception) and Self-efficacy

Choice of university Major is also determined to some extent by students' perception of themselves, their abilities, competences and potentials. A key component of students' self-perceptions of themselves (and which has an influence on their choice of Major) is self-efficacy. Self-efficacy refers to the belief that one can master a situation and produce positive outcomes. Thus, it is individuals' beliefs about their ability to behave in a way that produces desired outcomes (Berndt, 1997).

Applied to education, self-efficacy would refer to a student's beliefs about his or her ability to succeed in his or her chosen major field of study (Porter & Umbach, 2006). Bandura believed that self-efficacy has a powerful influence over behaviour. For instance, learners are high in self-efficacy with respect to academic tasks if they think that they can get high grades by working hard.

Conversely, learners are low in self-efficacy with respect to academic tasks if they think they can't get high grades even if they work hard (Berndt, 1997). The more students believe that they are capable of registering significant success in a given Major of study the more likely they will tend to choose that field and the less they believe they can register successful outcomes in a given field of study, the less likely they are to choose that field.

According to Pringle, Dubose & Yankey (2010) one's level of self-efficacy may be regulated (reinforced or diminished) by the degree of success one has registered in a given domain. Hence, for them, the more success a student has in a particular area of study, the more likely that student is to pursue that given area of interest with greater effort (Pringle, Dubose & Yankey, 2010). This corroborates Fass & Tubman (2002) who argued that if students feel successful and confident about their capabilities, it would be easier for them to make an accurate choice of university Major.

2.2.10. Economy and Post-Graduation Job Prospects

One of the most important factors in deciding whether one will choose a given academic discipline or not is the job or career prospect that the Major exposes the individual to upon graduation. Many students choose their academic majors with the hope that the Major will one day lead them to find employment (Edmonds, 2012). Since many students seek to get into the job market upon graduation, their choice of Major is often conditioned also by the job prospects of the

given Majors. Studies have confirmed that students are more likely to prioritize choosing those disciplines that offer a high certainty of employment in the job market post-graduation.

For instance, Yazici&Yazici (2010) found that guaranteed employment, expected earnings in the field as well as prestigious career were very important factors in determining students' choice of College Major. Beggs, Bantham& Taylor (2008) and Dietz (2010) are in agreement that job characteristics such as starting salary, earning potential, job autonomy, prestige, work-life balance, benefits, and advancement opportunities are all important to students in deciding which Majors will readily orient them to a job opportunity.

According to Roksa&Levey (2010), some study programs are inherently occupationally specific and provide training that will expose the student more directly to a job that is related to that major; other programs have few vocational characteristics linked to them and so do not offer any clear and direct path to a future career. This means that in choosing academic Majors, if the student's motivation is immediate employability upon graduation, the student would tend to choose those majors which offer high probability of a place in the job market than those which do not.

The issue of whether or not academic Majors are relevant to the needs of the job market is a challenge for the educational system such as the one in Cameroon. Edmonds (2012) has argued that the educational system sometimes provides students with a degree but with limited or not specific training for an occupation. This makes the transition from the field of study to a job a serious challenge for many students.

There is therefore need, according to these authors, to tailor academic programs to the needs of the job market, especially by focusing on the development of intellectual and practical competences by students. Hence, Dietz (2010) thinks that for students whose ultimate orientation is a paid job, taking cognizance of the number of graduates who are unable to find a job in their major is essential counsel for students making a choice of a major field of study.

Not only the job prospects which a given field of study offers but also the state of the economy can and does influence students' choice of College Majors. Duffy & Dik (2009) have pointed out that changes in economy and market conditions have the potential to influence job opportunities and resources. Some economies experience very low growth rates while others are often on the decline. This makes many potential investors scared of investing, with the consequence that there is a growing labour force (both skilled and unskilled) without a corresponding increase in the demand for the services of labour.

Gorsline, Holl, Pearson & Child (2006) have pointed out that the ability to be more flexible and versatile in a work situation is the key to survival in a struggling economy. This, as Roksa&Levey (2010) explain, is because in a struggling economy with low employment and low wages, employers tend to demand but a work force that is more highly skilled, flexible, and has both technical expertise and general skills in communication, critical thinking and reasoning. The implication of this for students' choice of Major Field of study is that students may tend to choose those Majors that

relatively offer more chances of employment or that open them to a good variety of jobs.

Comparing the stakes will help students make a choice of one field over the others. Edmonds (2012) even advises that in adverse economic conditions, when making a choice of an academic Major, students should pick up a major that would ensure for them a stable, secure and successful future and not what they personally feel is the best fit for them.

The above factors are clearly not exhaustive. Other factors that could determine if students will choose a given major or persist in it could be time frame, availability of teaching staff, gender, one's family income and status, and aspirations. Different students are influenced differentially in their choice of major field of study. However, the ideal situation is for students to choose majors that would fit with their interests, competences, passions and which at the same time would easily guarantee them a place in a career wherein they can find satisfaction.

2.2.11. Gender

Sex differences between boys and girls have been identified as one of the main factors that determine students' choice of major field of study. According to Anyi (1991), Okonkwo's (1980) study of Nigerian secondary school students found that boys preferred engineering, medicine and agriculture while girls preferred nursing and teaching. Yuh (1980) investigated the correlates of vocational orientation among some Nigerian secondary school students. The study found that more boys than girls preferred realistic, investigative and enterprising careers.

Challenges in making a choice of a Major

The choice of a career is one of the most meaningful, crucial and important decisions in the life of very human being. As many young people grow up they look forward to the time when they will complete their education and pick up a job in the labour market and for many, this job is a vocation they admire and desire. The choice of a career is a significant and important decision in an individual's life because, according to Butler cited in Anyi (1991), the job a person does is an expression of who the person (doer) is since in some way the work one does mirrors him or her.

These sentiments are in line with Super (1963) who sees vocational choice as an expression of a vocational self-concept and implied in this is the fact that academic choice (such as the choice of a university major) is an expression of a person's academic self-concept. According to Super, in making a career choice (and choice of major field of study) a person implicitly articulates his identity (what he believes he is and what he thinks he is capable of becoming).

Yet as important as choosing a career or a major field of study is, it sometimes brings with it anxiety and a number of challenges. Cicero, the ancient Roman Stoic philosopher who is cited in Gesinde (1973) has pointed out one of these challenges as being the fact that individuals sometimes do not know what manner of persons they wish to be or what calling (vocational or educational) they wish to follow in life.

Gesinde has argued that individuals frequently shift between careers and fields of studies either to satisfy a need that is currently lacking or because they perceive that the current jobs or fields of study they are in do not permit them to adequately implement the kind of people they think they truly are.

These considerations are particularly relevant given that the search for an appropriate university major concerns mostly adolescents who are engaged in the search for self-identity and who sometimes suffer from a crises of role confusion. These considerations suggest that counselling should be an important aspect of decision making not only in career choice but also in the choice of major fields of study leading up to the choice of career.

Given that people have individual differences and there are different job and academic environments, exposure to counselling services would help the students to gain an understanding of the requirements of each academic environment and match them with their individual abilities. Crites (1969) has identified the following three essential gains that counselling can enable the individual to consolidate in this regard:

- Counselling would ensure a clear understanding of self, abilities, aptitudes, interests, ambitions, resources and personality.
- Counselling would help the student to acquire detailed knowledge of the requirements, conditions of success, advantages and disadvantages, compensations, opportunities and prospects in different lines of work (and implicitly in different domains of study)
- Counselling would help the student to gain a true understanding of the relationship between self and job characteristics and between self and the characteristics of a given major discipline of study. This understanding would help the individual to be able to match his abilities and predispositions to given field of study and ultimately to a job whose requirements are consonant with his or her capabilities.

4. Findings

Table: Distribution of students by personality/interest type

Findings regarding students' typology model were presented on the table below

Personality/interest type	Stretched				Collapsed	
	Strongly Agree	Agree	Disagree	Strongly Disagree	SA/A	D/SD
Realistic personality						
I really like to manipulate objects, tools and all sort of machines.	130 (33.0%)	120 (30.5%)	106 (26.9%)	38 (9.6%)	250 (63.5%)	144 (36.5%)
I prefer working and touching concrete things rather than Ideas and reading.	136 (34.5%)	100 (25.4%)	132 (33.5%)	26 (6.6%)	236 (59.9%)	158 (40.1%)
I learn by doing a practical task on oriented skills instead of reading story books.	138 (34.8%)	139 (35.1%)	101 (25.5%)	18 (4.5%)	277 (69.9%)	119 (30.1%)
Multiple response set (MRS)	404 (34.1%)	359 (30.3%)	339 (28.6%)	82 (6.9%)	763 (64.4%)	421 (35.6%)
Investigative personality						
I like to analyze, observe scientific activities rather than seeking leadership roles.	121 (30.6%)	119 (30.1%)	126 (31.8%)	30 (7.6%)	240 (60.6%)	156 (39.4%)
It is enjoying using logic and solving complex, abstract problems	107 (27.0%)	164 (41.4%)	103 (26.0%)	22 (5.6%)	271 (68.4%)	125 (31.6%)
I aspire to be a biologist, chemist, system analysts or any related field	96 (24.2%)	91 (23.0%)	142 (35.9%)	67 (16.9%)	187 (47.2%)	209 (52.8%)
Multiple response set (MRS)	324 (27.3%)	374 (31.5%)	371 (31.2%)	119 (10.0%)	698 (58.8%)	490 (41.2%)
Artistic personality						
I admire playing music, painting, acting, and enjoy creative activities.	106 (27.0%)	139 (35.5%)	116 (29.6%)	31 (7.9%)	245 (62.5%)	147 (37.5%)
I communicate in an expressive, open manner since I am impulsive and emotional.	109 (27.7%)	143 (36.3%)	108 (27.4%)	34 (8.6%)	252 (64.0%)	142 (36.0%)

3. Methodology

The correlational survey design was used for this study to determine whether or not students' personality typologies predicted their choice of major fields of study. The sample size for this study comprised 399 male and female second and fourth-year students in the Universities of Buea and Bamenda. Out of the sample size of 369 students, 264 of them came from the University of Buea and 132 from the University of Bamenda. Out of 264 students sampled from the University of Buea, 90 were male and 174 were female while for University of Bamenda, 72 were male and 60 were female, giving a total male student respondent population of 162 and a total female student respondent population of 264. The sample was selected both purposively and randomly. Purposive sampling technique was used to select the faculties and schools from which the respondents would be chosen. In the selected faculties and schools of the two universities studied, respondents were chosen by simple random sampling technique. Data were collected using a questionnaire which in part consisted of Holland's Self Directed Search (SDS) and the Occupation Finder Inventory. The questionnaire had semi structured and open ended sub-questions numbered from 'a' to 'g' and was designed to investigate whether Holland's personality (interest) typologies predicted students' choice of programs/fields of study in Cameroon's State universities of Buea and Bamenda. data was analyzed using the descriptive and inferential statistical tools. The descriptive statistical tools used are frequency count, percentages and multiple responses set which aimed at calculating the summary of findings for each variable where applicable while the inferential statistical tests used are Chi-square test, Kappa Rater test, McNemer test and Spearman's rho test. The hypotheses of study are tested using a non-parametric Spearman's Rho test.

My capabilities include: musical, artistic and writing abilities.	71 (17.9%)	144 (36.4%)	146 (36.9%)	35 (8.8%)	215 (54.3%)	181 (45.7%)
Multiple response set (MRS)	280 (23.8%)	426 (36.2%)	370 (31.5%)	100 (8.5%)	706 (60.0%)	470 (40.0%)
Social personality						
I am responsible and consent with the welfare of others since I am humanistic and idealistic	126 (30.3%)	212 (53.5%)	41 (10.4%)	23 (5.8%)	332 (83.8%)	64 (16.2%)
I like participating in group activities: helping, training, counseling and developing others.	120 (30.8%)	208 (53.3%)	51 (13.1%)	11 (2.8%)	328 (84.1%)	62 (15.9%)
I prefer team work, interacting with others communication in a warm and friendly manner and having interpersonal skills	160 (40.4%)	157 (39.6%)	67 (16.9%)	12 (3.0%)	317 (80.1%)	79 (19.9%)
Multiple response set (MRS)	406 (34.8%)	557 (47.7%)	159 (13.6%)	46 (3.9%)	963 (82.5%)	205 (17.5%)
Enterprising personality						
Energetic, ambitious, adventurous, sociable and self-confidence are my personality traits	170 (42.9%)	172 (43.4%)	48 (12.1%)	6 (1.5%)	342 (86.4%)	54 (13.6%)
Professions like sales persons, businessmen managers are professions I admire.	67 (16.9%)	113 (28.5%)	139 (35.1%)	77 (19.4%)	180 (45.5%)	216 (54.5%)
I engage in activities such as leadership, management, selling and acquiring of money.	89 (22.5%)	166 (41.9%)	109 (27.5%)	32 (8.1%)	255 (64.4%)	141 (35.6%)
I like to be a secretary, teller, banker and an accountant.	30 (7.6%)	69 (17.4%)	167 (42.2%)	130 (32.8%)	99 (25.0%)	297 (75.0%)
Multiple response set (MRS)	356 (22.5%)	520 (32.8%)	463 (29.2%)	245 (15.5%)	876 (55.3%)	708 (44.7%)
Conventional personality						
I am comfortable working within and establishment of command carrying out defined functions.	64 (16.2%)	171 (43.2%)	88 (22.2%)	73 (18.4%)	235 (59.3%)	161 (40.7%)
I have skills in maintaining, manipulating and operating office equipment. .	89 (22.5%)	112 (28.5%)	147 (37.1%)	48 (12.1%)	201 (50.8%)	195 (49.2%)
Multiple response set (MRS)	153 (19.3%)	283 (35.7%)	235 (29.7%)	121 (15.3%)	436 (55.1%)	356 (44.9%)

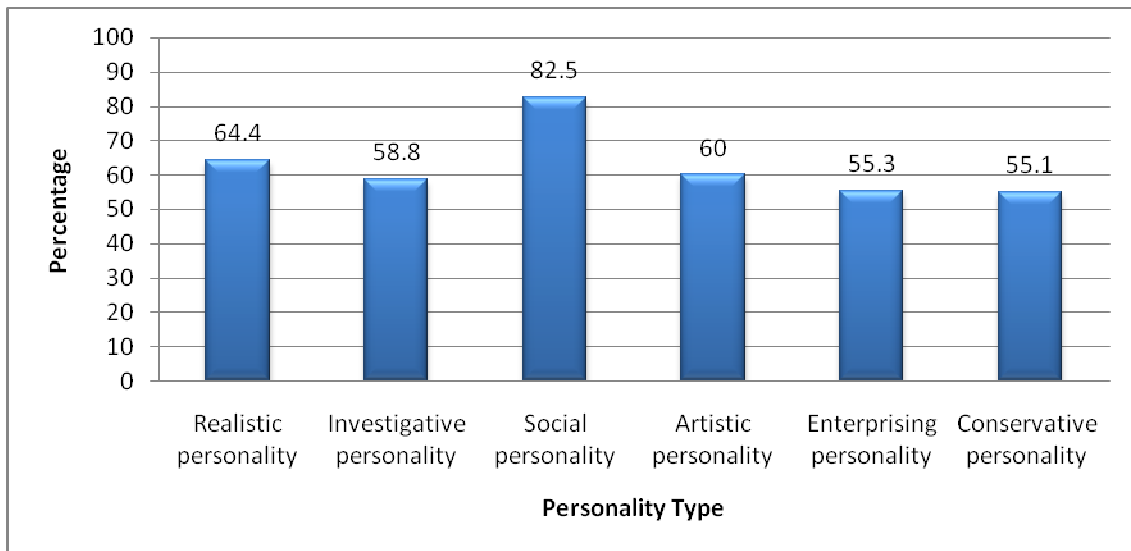
Under realistic personality type, findings showed that a majority of the students 250 (63.5%) accepted that they really like to manipulate objects, tools and all sorts of machines with 277 (69.9%) of them also agreed to learn by doing a practical task on oriented skills instead of reading story books. Also, findings showed that 236 (59.9%) of the students agreed that they prefer working and touching concrete things.

For investigative personality type, findings showed that 240 (60.6%) of the students indicated that they like to analyze and observe scientific activities rather than seeking leadership roles with 271 (68.4%) of them also indicated that they enjoy using logic, solving complex and abstract problems. 187 (47.2%) of them also aspired to be biologist, chemist and system analyst.

With reference to social personality type, findings showed that 245 (62.5%) of the students agreed that they admire playing music, painting, acting, and enjoy creative activities, 252 with (64.0%) of them also agreed that they communicate in an expressive and open manner since they are impulsive and emotional. Also 215 (54.3%) of them identified their capabilities to include: musical, artistic and writing abilities with a majority of them 332 (83.8%) agreed that they have concern for others welfare. Furthermore, a majority of the students 328 (84.1%) also agreed that they like participating in group activities, like helping, training and developing other. Majority of the students 317 (80.1%) agreed that they prefer team work and interacting with others.

As for enterprising personality type, findings showed that a majority of the students 342 (86.4%) agreed that they are energetic, ambitious, adventurous, sociable and self-confidence in their personality traits with 180 (45.5%) of them also agreed to admire professions like business. Also, 255 (64.4%) of the students agreed that they like to engage in activities like leadership, management, selling and acquiring of money with 99 (25.0%) of them agreed to become a secretary teller, banker and an accountant.

As for conventional personality type, findings showed that 235 (59.3%) of the students accepted that they are comfortable working within an establishment of command carrying out defined functions with 201 (50.8%) of them also agreed to have skills in maintaining, manipulating and operating office equipment. These findings were represented on the figure below



In summary, findings showed that 64.4% of the students have realistic personality, 58.8% of them have investigative personality, 60.0% of them are artistic, 82.5% of them have social personality, 55.3% of them have enterprising personality and 55.1% of them have conventional personality type.

Regarding students' first choice of major field of study, the following findings were obtained

Students' first major field of study	Frequency	Percentage
Law	44	11.1
Biochemistry	36	9.1
Chemistry	32	8.0
Management	26	6.6
Curriculum Studies and Teaching	24	6.1
History	18	4.5
Physics	18	4.5
Educational psychology	13	3.3
Economics	12	3.0
Accounting	10	2.5
Computer engineering	10	2.5
Computer science	10	2.5
Electrical engineering	10	2.5
Geography	10	2.5
Geology	10	2.5
Mathematics	10	2.5
Sociology and Anthropology	10	2.5
English	10	2.5
Agriculture	8	2.0
Medicine	8	2.0
Micro biology	8	2.0
Environmental science	6	1.5
Journalism and Mass Communication	6	1.5
Tourism	6	1.5
Woman and Gender Studies	6	1.5
Guidance and counseling	4	1.0
International relations	4	1.0
Political science	4	1.0
Women and Gender Studies	4	1.0
Zoology	4	1.0
Science of education	3	.8
Botany	2	.5
Computer networking	2	.5
Linguistics	2	.5
Literature	2	.5
Nursing	2	.5
Special Education	2	.5
Total	396	100

These were categorized into general domains of studies as follows

Grouping of first field of study	Frequency	Percentage
Social sciences	110	27.8
Education/Teaching	46	11.6
Science	144	36.4
Arts	32	8.1
Management	32	8.1
Technology/ Engineering	32	8.1
Total	396	100

From this table, it was seen that after grouping the students department of study, findings showed that 110 (27.8%) of the students were under social sciences, 46 (11.6%) of them were in their field of education/teaching, 144 (36.4%) of them were science students, 32 (8.1%) of them of equal proportions were studying arts, management and technology/engineering.

Table: Distribution showing the students' by current field of study

Students' current major field of study	Frequency	Percentage
Law	40	10.1
Biochemistry	20	5.1
Curriculum Studies and Teaching	20	5.1
Medicine	20	5.1
Chemistry	20	5.0
Agriculture	16	4.0
History	16	4.0
Management	16	4.0
Educational psychology	15	3.8
Geography	14	3.5
Political science	14	3.5
Guidance and counseling	12	3.0
Physics	12	3.0
Accounting	10	2.5
Computer engineering	10	2.5
Computer science	10	2.5
Electrical engineering	10	2.5
Tourism	10	2.5
Economics	8	2.0
Environmental science	8	2.0
Geology	8	2.0
Micro biology	8	2.0
Journalism and Mass Communication	6	1.5
Literature	6	1.5
Mathematics	6	1.5
Physics education	6	1.5
Sociology and Anthropology	6	1.5
Woman and Gender Studies	6	1.5
Science of education	5	1.3
Banking and finance	4	1.0
Fashion designing	4	1.0
Philosophy	4	1.0
English	2	.5
Botany	2	.5
Civil engineering	2	.5
Computer networking	2	.5
Health science	2	.5
Linguistics	2	.5
Nursing	2	.5
Special Education	2	.5
Total	396	100

Table: Grouping of students' current field of study

Grouping of first field of study	Frequency	Percentage
Social sciences	118	29.8
Education/Teaching	54	13.6
Science	130	32.8
Arts	34	8.6
Management	16	4.0
Technology/ Engineering	34	8.6
Total	396	100

After grouping the students department of study, findings showed that 118 (29.8%) of the students are under social sciences, 54 (13.6%) of them are in their field of education/teaching, 130 (32.8%) of them are under science, 34 (8.6%) of them studying arts, 16 (4.0%) of them are studying management and 34 (8.6%) of them are studying technology/engineering.

Table: Comparing changes in field of study

First major field of study			Current field of study		Have you ever changed your major field of study since you were admitted into the University		
Field of study	n	%	N	%		n	%
Social sciences	110	27.8	118	29.8	Yes	112	28.3
Education/Teaching	46	11.6	54	13.6	No	284	71.7
Science	144	36.4	130	32.8	Total	396	100
Arts	32	8.1	34	8.6			
Management	32	8.1	16	4.0			
Technology/Engineering	32	8.1	34	8.6			

McNemar-Bowker Test=22.208, df=25, P=0.005

Findings showed that from the first year that the students were admitted into the University, in the second and fourth year, there was significant change in program of study (McNemar-Bowker Test=22.208, df=25, P=0.005, <0.05). To support this it was observed that 28.3% of the student actually changed their program of study. The table below present in detail program that witnessed a drop/ increase in the number of students, and those that witnessed no drop nor increase in the number of students.

Table: Distribution of students by their change in program/field of study

Mapping changes in programs	Frequency	Percentage
Science to Science (Different program)	39	9.8
Social Sciences to Social Sciences (Different program)	22	5.6
Social Sciences to Science	8	2.0
Social Sciences to Arts	10	2.5
Science to Education	7	1.8
Art to Social Sciences	6	1.5
Social Sciences to Education	6	1.5
Education to Social Sciences	5	1.3
Science to Social Sciences	5	1.3
Education to Science	2	.5
Arts to Arts (Different program)	2	.5
Total	112	28.3

Findings showed that among the 112 (28.3%) of the students that change their first major field of study, 39 (9.8%) of them change from one program in science to another in science followed by 22 (5.6%) of them that change from one program in social sciences to another program in the same social sciences. Findings also showed that an equal proportion of the students 8 (2.0%) move from Social Sciences to Science and Social Sciences to Arts.

Also, 7 (1.8%) of the students moved from Science to Education with 6 (1.5%) of them of equal proportion moved from Art to Social Sciences and Social Sciences to Education. Findings also showed that an equal proportion of the students 5 (1.3%) moved from Education to Social Sciences and Science to Social Sciences. Finally, 2 (0.5%) of the students of equal proportion moved from Education to Science and from one program in Arts to another program in Arts.

Table: Association between personality type and competence

Gender	Personality type						Competences					
	Total frequency						Total frequency					
	R	I	A	S	E	C	R	I	A	S	E	C
Male	60	34	90	70	60	39	41	35	93	87	21	45
Female	43	51	23	87	81	41	37	46	32	81	82	28
Total	103	85	113	157	141	80	78	81	125	168	103	73

Kappa Rater Test=0.333, P=0.157

The Kappa Rater test was used to compare for consistency between students' personality type and competence in their choice activities. The results yield a Kappa Rater test value of 0.333 and a P-value of 0.157 >0.05. The implication of this is that a significant number of the students are consistent between their personality type and choice of activities. That is, there is similarity between their personality type and choice of activities.

Testing of hypothesis two (Ho₂). Holland's personality interest types do not significantly predict students' choice of programs in Cameroon's state universities.

Table: Model Fitting Information predicting the relationship between personality interest types and students' choice of programs

Model	Model Fitting Criteria	Likelihood Ratio Tests			Pseudo R-Square (Explanatory power)
	-2 Log Likelihood	Chi-Square	df	P-value	Cox and Snell
Intercept Only	1187.036				.933
Final	148.800	1038.237	255	.000	

Statistically, findings showed that students' personality type significantly predict their choice of program (Chi-Square=1038.237, df=255, P=0.000, <0.05) with a high explanatory power of the model 93.3% (Cox and Snell =0.933).

Table: Likelihood Ratio Tests depicting student's personality type and choice of program

Effect	Model Fitting Criteria	Likelihood Ratio Tests		
	-2 Log Likelihood of Reduced Model	Chi-Square	df	P-value
Intercept	148.800 ^a	.000	0	.
Realistic personality	373.760 ^b	224.960	45	.000
Investigative personality	444.196 ^b	295.396	45	.000
Artistic personality	376.178 ^b	229.568	45	.000
Social personality	645.667 ^b	496.867	80	.000
Enterprising personality	730.614 ^b	581.815	55	.000
Conservative personality	421.294 ^b	272.494	30	.000

Further analysis showed that Realistic personality, Investigative personality, Artistic personality, Social personality, Enterprising personality and Conventional personality significantly influenced students' choice of program with P-values all <0.05. Therefore, the null hypothesis was rejected and the alternative hypothesis that states that Holland's personality interest types significantly predict students' choice of programs in Cameroon's state universities was accepted. The table and figure below distribute the students' personality by most dominant choice of program.

Field of study most dominant

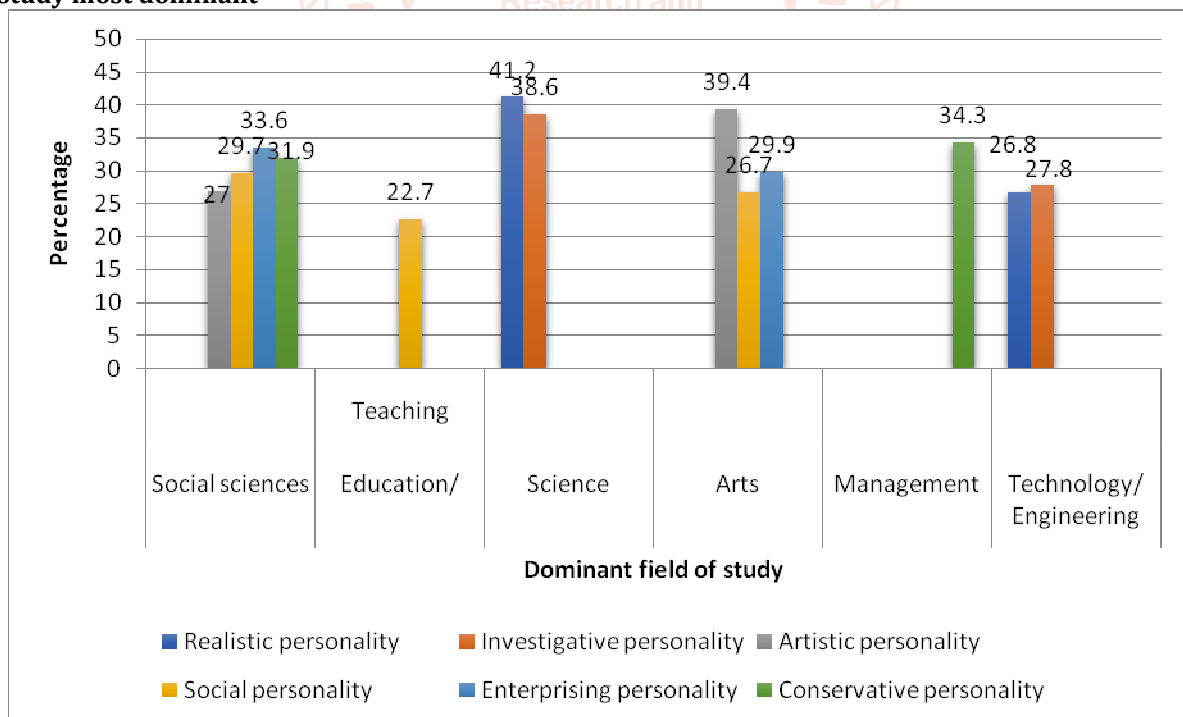


Figure: Distribution of students' personality by most dominant choice of program

Findings showed that significant proportion of the students in science 41.2% and technology/engineering 26.8% are those with realistic personality. Also, a significant proportion of the students in technology/engineering 27.8 and science 38.6% are those with investigative personality. For Artistic social science has 27.0% while Arts has 39.4%. Furthermore, findings showed that significant proportion of the students in teaching 22.7%, arts 26.7% and social sciences 29.7% are those with social personality. More so, a significant proportion of the students in social sciences 33.6%, arts 29.9 are those with enterprising personality while 31.6% and 34.3% of the students in management and social sciences are students with conventional personality.

Therefore, the null hypothesis that states that Holland's personality interest types do not significantly predict students' choice of programs in Cameroon's state universities was rejected and the alternative hypothesis that states Holland's personality interest types significantly predict students' choice of programs in Cameroon's state universities to a greater extent was accepted.

5. Conclusion

The findings of this study regarding the motivations behind students who chose to change their initial major field of study are consonant with Holland's (1985a) assumption that person-environment fit is related to various educational outcomes such as stability, satisfaction, and success or with achievement. The findings are also in line with Gilbreath, Kim & Nichols (2011) who argued that when students are fortunate enough to achieve good fits, they would be more likely to emerge from college with high (academic) self-esteem and self-efficacy. For these authors, students are more likely to choose not only an academic major field of study that matches their personality characteristic; they are also more likely to choose a major field of study that meets their needs and that fit between students' needs and the extent to which their major field of study meets these needs will have positive effects on their psychological well-being and satisfaction with the major field of study.

The statistics and reasons explaining why some students persisted with their initial major field of study reflect Holland's (1985a) assumption that perceptions of fit are critical to stability. They are also in tandem with Kristof-Brown et al. (2005) who argued (albeit implicitly) that students who perceive themselves as being in fit with their majors, that is, as having characteristics that match their major programme of study (or who perceive that their majors meet their needs), are more likely to feel positive, secure and confident about their major field of study.

Findings showed that students' personality type significantly predict their choice of programme. This was demonstrated significantly by the match between students' personality type and major field of study. These findings suggest that congruence is a fluid construct and that students fit with their different majors at different levels of congruence. Based on this, it is reasonable to assume that different levels of student-academic major fit will predict different levels of positive attitudes towards the programme, predict differential levels of secure feelings about the program and result in differential levels of confidence among students about their major field of study. Strength of fit, therefore, could be considered a significant factor of level of satisfaction, strength of stability and quality of wellbeing.

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